

Errata for “WMO WDCGG DATA SUMMARY WDCGG No.41”

31 August 2018

“CALIBRATION AND STANDARD SCALES” Section 2 “Carbon Dioxide (CO₂)” (p. 46)

Correct

(currently available version)

2. Carbon Dioxide (CO₂)

In 1995, the National Oceanic and Atmospheric Administration’s Earth System Research Laboratory (NOAA/ESRL, formerly CMDL; Climate Monitoring and Diagnostics Laboratory) in Boulder, Colorado, USA, took over the role of the Central Calibration Laboratory (CCL) from the Scripps Institution of Oceanography (SIO) in San Diego, California, USA. Since then, NOAA/ESRL has served as the CCL responsible for the maintenance of the GAW Primary Standard for CO₂. As CCL for CO₂, NOAA/ESRL maintains a high-precision manometric system for absolute calibration of CO₂ as the reference for GAW measurements throughout the world (Zhao *et al.*, 1997), as well as carrying out Round Robin in the function of WCC. It has been recommended that the standards of the GAW measurement laboratories be calibrated at least every three years at the CCL (WMO, 2016).

Under the WMO calibration system, there have been several calibration scales for CO₂, e.g., SIO-based X74, X85, X87, X93 and X2002 scales and the

NOAA/ESRL-based WMO Mole Fraction Scale partially based on previous SIO scales. The CCL adopted the WMO X2005 scale, reflecting historical manometric calibrations of the CCL’s set of cylinders

and the possible small differences between SIO and NOAA/ESRL calibrations. The most current WMO Mole Fraction Scale is the WMO X2007 scale.

To assess the differences in standard scales among measuring laboratories, about every three years NOAA/ESRL organizes intercomparisons or Round Robin experiments endorsed by WMO. Many laboratories participated in the experiments organized in 1991–1992, 1995–1997, 1999–2000, 2002–2006, 2009–2012 and 2014–2015. Table 2 shows the results of the experiments performed in 2014–2015, in which the mole fractions measured by various laboratories are compared with the mole fractions measured by NOAA/ESRL (http://www.esrl.noaa.gov/gmd/ccgg/wmorr/wmorr_results.php). In addition, many laboratories compare their standards

Incorrect

(former version until 31 August 2018)

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